

Evanston Northwestern–Healthcare Research Institute

Spectral Markers for Early Detection of Colon Neoplasia

Objective

Develop and apply light scattering technologies to identify individuals at high risk of developing colon cancer.

Program Description

Four–dimensional light scattering fingerprinting (4D–ELF) can be used to analyze cellular architecture and to identify spectral makers that precede conventional molecular markers of experimental colorectal cancer. These spectral markers will be validated using an endoscopically compatible 4D–ELF probe during colonoscopy.

Specific Aims

- Discover novel 4D–ELF signatures in uninvolved mucosa (i.e. the "field effect") that can discern the presence of colon neoplasia in surgical resection specimens.
- Formulate prediction rules based on rectal 4D–ELF signatures that are able to risk–stratify patients for colorectal neoplasia.
- Investigate the ability of rectal 4D–ELF signatures to detect an inherited predisposition to colorectal and predict the phenotypic expression of the genetic substrate.

Contact Information

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